

DOCUMENT RESUME

ED 282 506

HE 020 421

TITLE Alternatives for Testing Maryland College Students.

INSTITUTION Maryland State Board for Higher Education, Annapolis.

PUB DATE Dec 84

NOTE 10p.; Paper collected as part of the American Association for Higher Education Assessment Forum.

PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS *Academic Achievement; Aptitude Tests; Basic Skills; Cognitive Tests; *College Students; *Educational Assessment; *Educational Testing; Higher Education; Intellectual Disciplines; Knowledge Level; Majors (Students); Predictive Measurement; *State Colleges; State Programs; Student Evaluation

IDENTIFIERS *AAHE Assessment Forum; *Maryland

ABSTRACT

Alternatives for testing the achievement of college students in Maryland are reviewed by committee members appointed by the State Board for Higher Education and Maryland's public institutions of higher education. The achievement testing alternatives would be a means of assessing institutional effectiveness; all entail the use of tests currently in existence. Four types of achievement tests traditionally given to students are: tests of basic skills, tests of general cognitive development, tests of subject matter mastery in specific fields of study, and tests for helping to predict future performance in graduate or professional school. The only widely used, nationally normed instruments for assessing subject matter achievement are the subject area versions of the Graduate Record Examination. General issues that should be carefully considered in developing an achievement testing program are identified: student motivation to perform well, testing for individual assessment, selecting a sample of students instead of requiring all students to be tested, and testing transfer students. Two testing approaches that seem to have advantages over other alternatives are briefly discussed: a single test for all public institutions and campus-designed testing programs. (SW)

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ALTERNATIVES FOR TESTING MARYLAND COLLEGE STUDENTS

State Board for Higher Education
16 Francis Street
Annapolis, Maryland 21401
December, 1984

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This report was prepared by a Committee whose members were appointed by the State Board for Higher Education and Maryland's public institutions of higher education. The following are members of the Committee.

Dr. Robbie Champion
Staff Specialist, Teacher Education
Maryland State Department of Education

Dr. Marilyn E. Demorest
Associate Professor of Psychology
University of Maryland Baltimore County

Dr. Patricia G. Hauk
Associate Executive Director for
Academic Affairs
State Board of Trustees of the State
Universities and Colleges

Dr. Bernard Khoury
Associate Vice President for
Academic Affairs
University of Maryland Central Administration

Mr. Daniel D. McConochie, Director
Planning and Research
State Board for Community Colleges

Dr. Frederick Parenta, Associate Professor
Department of Psychology
Towson State University

Dr. William Schafer, Associate Professor
College of Education
Department of Measurement, Statistics and Evaluation
University of Maryland - College Park

Dr. Clayton Stansbury
Director, Honors Program
Morgan State University

Dr. John D. Underwood, Chairman
Division of Human Development
St. Mary's College of Maryland

Dr. George Funaro, Chair
Deputy Commissioner
State Board for Higher Education

The purpose of this report is to present to the Commissioner of Higher Education and the heads of the Maryland public segments of higher education alternatives for testing the achievement of college students as an aid in assessing institutional effectiveness. These alternatives are presented to provide the State Board for Higher Education with a basis for responding to the testing recommendations of the Legislative Auditor and the Joint Chairmen. All specific alternatives considered in this report entail the use of tests currently in existence.

USING TESTING IN EVALUATING INSTITUTIONAL EFFECTIVENESS

Traditionally tests have been used in higher education to evaluate student performance for purposes such as admission, placement, and graduation. Testing to assist in evaluating institutional effectiveness, which is the focus of this report, has not been widely implemented to date, although it is common in elementary and secondary education.

Because of the diversity of higher education and its multiple goals, there is not strong agreement concerning what criteria are most useful for evaluating institutional effectiveness. It is, therefore, important that testing be viewed as only one of many possible means by which to evaluate campuses. Other measures that should be part of any evaluation system, and already are in existence in Maryland, are: follow-up studies of graduates; surveys of employers of graduates; assessments by outside experts; and, trends in degrees awarded, program enrollments, and other key qualitative and quantitative indicators.

Tests attempting to evaluate institutional performance should be concerned mainly with determining to what extent an institution has added to the academic achievement levels of students during their period of enrollment. Therefore, it is important to know something about each student's level of achievement prior to entry into an institution in order to estimate the separate effects of previous academic preparation and of institutional programs. While this report does not deal with the specific methodology for accomplishing this, the importance of controlling for pre-enrollment achievement levels in most achievement testing programs is stressed here.

It also is desirable in interpreting results to take into account mission differences among campuses. For example, students from a campus whose mission primarily is career preparation would not be expected to score as well on a test used for predicting success in graduate school as students from a campus which has preparation for advanced study as a major focus of its mission. It would, however, be appropriate to use scores from campuses with comparable missions within the State and throughout the country for comparison.

CONSIDERATIONS IN SELECTING A TESTING PROGRAM

There are at least four different types of achievement tests that appropriately can be given to students in institutions of higher education: (1) tests of basic skills, (2) tests of general cognitive development, (3) tests of subject matter mastery in specific fields of study, and (4) tests for helping to predict future performance in graduate or professional school. Some of the advantages and disadvantages of each are discussed below.

Tests of Basic Skills

Tests of basic skills attempt to determine the extent to which students have the fundamental prerequisite skills necessary to do college-level work. Obviously, a student should not be expected to successfully complete a collegiate program of study without at least a twelfth grade level of mastery of these skills. Because tests for high school graduation typically do not require this level of basic skills attainment, testing immediately following admission to college is desirable to determine student readiness for college-level work and for placement in remedial programs designed to enhance student prospects for success in collegiate courses.

Because educating students in basic skills is not the primary focus of a college education, but rather a remedial activity, it is of questionable value to administer tests of basic skills other than immediately following admission, except to evaluate remedial education programs themselves. This along with the fact that virtually all Maryland public institutions already screen entering students for basic skills and provide remedial help to those in need of assistance suggest that the issue of insuring that students possess requisite basic skills is being addressed adequately. Therefore, any additional resources to be devoted to testing should be directed toward those areas which are the primary focus of a college education.

Tests of General Cognitive Development

Tests of general cognitive development attempt to evaluate the extent to which students have mastered the knowledge and skills assumed to be common to all college-educated persons. One of the stated goals of virtually all campuses is to impart to students a common core of knowledge in the arts and sciences along with higher order general intellectual skills such as analysis and effective communication. Therefore, assuming that agreement on the content of this core can be established, this is an appropriate area in which to test student achievement. Because the general education portion of a student's program is a primary vehicle by which this common core of knowledge and skills is conveyed (although obviously the acquisition of higher order general intellectual skills is a goal of the entire curriculum), testing of this type appropriately may be carried out near the end of the sophomore year of study or later. It would,

therefore, be an appropriate test for students in both community and four-year colleges.

While a number of tests in use could be considered for assessing the effectiveness of campuses in aiding general cognitive development, two appear to have major advantages over other alternatives: (1) COMP (College Outcomes Measures Program) of ACT, and (2) the Test of General Intellectual Abilities of ETS. Both emphasize assessment of general intellectual achievement and are not subject-matter specific. The latter is currently in use at St. Mary's College of Maryland as a means by which the campus evaluates its own effectiveness. However, the COMP is much more widely used nationally and because of this, would appear to be the better choice. In either case, the validity of the test's content should be evaluated against an agreed-upon common core of knowledge. A close examination of the validation process for these tests will establish the extent to which this has been accomplished.

The cost per student per administration of the COMP is \$6 or \$10, depending on which version of the instrument is used. The cost for the Test of General Intellectual Abilities is \$8 per student per administration.

Tests of Subject Matter Achievement

Tests of subject matter achievement attempt to assess the extent to which students have mastered the most important concepts and facts in their major areas of study. At most campuses this goal is given high priority and is, therefore, an appropriate object of achievement testing. Because subject area specialization is the primary focus of upper division study, a test of this type appropriately can be given toward the end of the senior year. Thus, the same type of subject matter achievement test could not be used in both two-year and four-year colleges.

Testing subject matter achievement presents more difficulties than testing general cognitive development. Most importantly there is no series of tests in use at the present time that is designed specifically to measure achievement in a wide range of subject areas. The only widely used, nationally normed instruments for assessing subject matter achievement are the subject area versions of the Graduate Record Examination (GRE-Subject Area). The major drawback of the GRE-Subject Area is that it is designed to measure achievement in those areas that are considered important for success in graduate school. While in this sense the GRE-Subject Area is indeed an achievement test, it deals only with the particular skills deemed important for a relatively narrow range of students - those seeking entry into graduate school. The cost per student per administration for the GRE-Subject Area is \$29.

Another means by which subject matter achievement can be evaluated is by monitoring student performance on exams for licensure or certification. This approach is appropriate because preparation for such exams is clearly an objective of certain programs such as nursing and teacher education. Because these exams seek to insure a minimum level of competence for all persons seeking licensure or certification, measures of student performance prior to entry into an institution are not of interest. Although this approach permits measuring the achievement of only a relatively small portion of the student body on most campuses, student motivation to do well on such exams can be assumed and no extra cost to the State is involved.

A third approach to subject matter achievement testing would be to orient testing programs to the unique characteristics of each department or campus. Thus, students from departments whose major focus is on preparation for graduate study could take a GRE-Subject Area exam, for example. At the same time scores of students on licensing or certification examinations could be monitored for departments whose major objective is to prepare students for professional fields. Students in other departments could possibly take other tests, if appropriate exams could be located for which national norms available. For fields in which no such tests exist, faculties may be encouraged to develop local testing programs; outside evaluation of the materials would be important to establish credibility.

Tests for Predicting Future Academic Success

For many students a primary objective of attendance at college is preparation for future study in graduate or professional school. Therefore, monitoring the performance of these students on exams such as the GRE, LSAT, MCAT, and GMAT is an appropriate means for monitoring the adequacy of preparation for advanced study provided by a campus. Because of the major differences between some campuses in terms of students served and programs offered, care would need to be exercised to insure that each campus is compared to itself over time or to campuses with similar missions rather than to campuses with dissimilar missions. This approach would also apply only to a limited population, the size of which would vary considerably by campus, and the results could not be generalized to students not seeking admission to graduate or professional school. On the other hand, student motivation would be assured and the State would incur no additional cost.

Additional Issues

There also are some general issues which should receive careful consideration in developing any achievement testing program.

Student Motivation. When testing is carried out for course placement, licensure or certification, or admission to graduate or professional school, there is little question that most students will be motivated to perform well. In other cases, however, motivation may be doubtful. Only if the outcome will have impact on the test takers can motivation be assured. Absent this and because lack of motivation on the part of students could render a testing program invalid, special efforts will be required to help insure that students understand the importance of testing and that their level of effort is high.

Testing for Individual Assessment. Although the focus of this report has been on using achievement tests for campus evaluation, there also may be interest on the part of campuses or departments in using results for evaluating individual students. While this would help to insure student motivation, it also requires precautions. At a minimum, if such tests are used for individual assessment, provisions should be made for retesting and remediation of students who do not obtain satisfactory scores.

Sampling. There is no reason that a properly selected sample of students could not be tested at each campus instead of requiring all students to be tested. If cost is an important concern, a sampling approach should receive serious consideration. However, such an approach could complicate the problem of insuring adequate student motivation.

Transfer students. Transfer students present a special problem. The different effects of two campuses on the achievement level of a given student cannot easily be estimated and the use of a pretest may not be feasible.

RECOMMENDATIONS

Two testing approaches seem to have clear advantages over other alternatives. These are discussed briefly below.

A Single Test for All Public Institutions

If it is mandated that students at all public institutions take a single test, the COMP is clearly the best choice at the present time. It is in widespread use, it is not subject-matter oriented, norms are available for a variety of types of institutions, and it measures achievement in higher order general intellectual skills, a primary mission of almost all campuses. It is appropriate to administer the COMP following completion of at least 60 hours of degree credit work.

Campus-Designed Testing Programs

If a single test as described above is not mandated, a different approach could be adopted which permits campuses

to choose existing tests appropriate for evaluating the extent to which they are carrying out their missions. Such an approach would best be carried out under the direction of an appropriately constituted statewide panel which would be responsible for establishing implementation and reporting schedules and for acceptance of segmental/campus testing plans. This panel also would be responsible for establishing guidelines for testing programs on topics such as the nature of acceptable tests and the numbers of students to be tested. While this approach would make comparisons among institutions within the State more difficult than use of a single Statewide test, it would have the advantage of taking into account the unique characteristics of each campus. This approach also could combine, if desired, tests of subject matter achievement with tests of general cognitive development. Means for establishing credibility of the program at each campus are crucial for the success of this option.